

Short Communication

Reduction of *Carex rhytidocarpa* Nelmel
(Cyperaceae) to a synonym of *C. inversa* R.Br.

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Carex inversa R.Br. is widespread in Australia and New Zealand. In Queensland it occurs from Crediton in Central Queensland to as far west as Tregole National Park, and is also found in all other Australian states apart from the Northern Territory. It is a variable species, as seen from previous attempts to recognise varieties within it.

Brown (1810: 242) described *C. inversa* from specimens that he collected at Port Jackson. Boott (1867: 151–152) described *C. inversa* var. *major*, *C. inversa* var. *minor* and an unnamed variety from the Brisbane River. This latter ‘variety’ was erroneously referred to as *C. inversa* var. *perigynium* Boott by Chapman (1991: 615); however, the ‘perigynium’ is part of the latin description given by Boott (1867: 151) and not a formal name. Boott (1867) distinguished his var. *major* from *C. inversa sensu stricta* (his variety *minor*) by it being a more robust plant, and having a utricle with a longer beak. Kükenthal (1909) subsequently reduced var. *major* to a forma under *C. inversa*. Boeckeler (1875) described a further variety *C. inversa* var. *leichhardtii* based on material in MEL (Dowe 2005). No mention was made by any of these authors about the variability of rugosity in the utricles.

Bentham (1878) described *C. inversa* var. *major* citing specimens collected by Mueller and Wilcox and did not refer to Boott’s or Boeckeler’s varieties or the material that they cited; hence his publication of the name must be considered illegitimate. Clarke (1908) later raised *C. inversa* var. *major sensu* Bentham (1878) to species rank using the name *C. lophocarpa* and basing his species on the same specimens cited by Bentham.

Nelmel (1942) described *Carex rhytidocarpa* from a specimen collected at Wandoan in Queensland. He distinguished it from *C. inversa* by the utricle being rugose between the nerves, but did not discuss the variability of the species as a whole. At the time he only published a tentative key to the species of *Carex*, using the available specimens at Kew, explaining “that it is not likely that a full account can be printed during the war”.

Study of collections in the Queensland Herbarium indicate that individuals referred to by these names possess utricles that display a continuous character range from smooth to deeply rugose. Some specimens display a wide range of rugosity within individual inflorescences. The amount of rugosity between the nerves in the utricle, while not absent, is diminished in coastal districts and more obvious in inland areas, indicating clinal variation in this character. Therefore *Carex rhytidocarpa* should not be maintained as a taxon at any rank as it does not differ in any other character. It may be useful to study the genetics of this taxon in order to understand the observed variation. Wilson (1993) commented that *C. lophocarpa* is “possibly not separate from *C. inversa*”, however an examination of specimens of *C. lophocarpa* held at BRI supports the retention of this species (see description and key below). The reduction of *C. rhytidocarpa* to the synonymy of *C. inversa* is formalised below.

***Carex inversa* R.Br., Prodr. Fl. Nov. Holland.** 242 (1810); *Vigna inversa* (R.Br.) Soják, *Cas. Nár. Muz. Praze* 148: 195 (1979). **Type:** New South Wales. Sydney District (Port Jackson), near Hawkesbury & Parramatta, 1802–1805, *R. Brown Iter Australiense 6078* (holo: BM [photo!]).

Carex inversa var. *major* Boott, *Ill. Gen. Carex* 4: 151, t. 487 (1867); *Carex inversa* f. *major* (Boott) Kük., *Pflanzenr. (Engler)* 38: 189 (1909) [non *sensu* Benth (1878: 438)]. **Type:** Western Australia. Swan River, *Drummond s.n.* (syn: *n.v.*); Victoria. Wanduc Vale, *Robertson s.n.* (syn: *n.v.*); Queensland. Dawson River, *Mueller s.n.* (syn: *n.v.*).

Carex inversa var. *minor* Boott, *Ill. Gen. Carex* 4: 151, t. 488 (1867). **Type:** New South Wales. Sydney District (Port Jackson), near Hawkesbury & Parramatta, 1802–1805, *R. Brown Iter Australiense 6078* (syn: BM [photo!]), *Sieber 453* (syn: *n.v.*); Tasmania. *Gunn s.n.* (syn: *n.v.*), *Archer s.n.* (syn: *n.v.*).

Carex inversa var. *leichhardtii* Boeckeler [as *β Leichardtii*], *Linnaea* 39: 70 (1875) **Type:** Nova Holland. Paramatto, *Leichardt [sic] s.n.* (holo: MEL, *n.v.*).

Carex inversa f. *parvula* Kük., *Pflanzenr. (Engler)* 38: 189 (1909). **Type:** Neu-Süd-Wales. *Camfield s.n.* (syn: *n.v.*); Neuseeland. Whangaroa, *Petrie sub Cockayne 1642* (syn: *n.v.*).

Carex rhytidocarpa Nelmess, *Proc. Linn. Soc. London* 155: 282 (1944), **syn. nov.** **Type:** Queensland. LEICHHARDT DISTRICT: Wandoan, *Hubbard 5004* (holo: K *n.v.*; iso: BRI)

Perennial with long-creeping rhizome, monoecious, glabrous. Culms tufted, erect, terete; 5–50 cm long, 0.5–1.5 mm diameter. Leaves more than half the length of the culm, erect, flat, 0.7–3 mm wide; sheath pale to mid-brown, with a membranous ligule. Involucral bracts foliaceous, erect, longer than inflorescence, 2–10 cm long. Inflorescence terminal, of 2–6 sessile spikes, 5–30 mm long, proximal spike sometimes distant. Spikes gynaeandrous, ovoid to globose, with 10–40 spikelets, 5–15 mm long, 4–12 mm wide. Spikelets 1-flowered, unisexual, clustered, brown to stramineous, 2.2–4.5 mm long, 1–2 mm wide; rachilla persistent, wingless. Glumes ovate, 2–4 mm long, 1–2 mm wide, glabrous, membranous, green-keeled with a straight mucro. Stamens 3; anthers linear, connective smooth. Style deciduous, 2-fid, glabrous. Utricle concave-convex, obovoid to ellipsoid to broadly ovoid, 2.2–4.5 mm long,

1–2.5 mm wide, pale green to yellow-brown, longitudinally nerved, transversely wrinkled to smooth between nerves; margins entire to hispid; beak 0.3–1.2 mm long, hispid, bifid. Nut biconvex, broadly obovoid or broadly ellipsoid to orbicular, 1.2–1.8 mm long, 1.2–1.8 mm wide, brown to dark brown, smooth, apex mucronulate, mucro 0.1–0.2 mm long.

Distribution and habitat: Queensland, New South Wales, Victoria, South Australia, Tasmania and Western Australia. In Queensland the species has been recorded from South Kennedy, Leichhardt, Port Curtis, Burnett, Warrego, Maranoa, Darling Downs, and Moreton pastoral districts. Found in moist and dry areas in grassland and open forest.

Carex lophocarpa C.B. Clarke, *Bull. Misc. Info. Kew – Addit. Ser.* 8: 69 (1908) [as ‘lophocarpus’]. **Type:** [Queensland. MORETON DISTRICT:] Brisbane River, *F. Mueller s.n.* (syn: *n.v.*); [New South Wales.] Clarence River, *Wilcox s.n.* (syn: *n.v.*).

Carex inversa var. *major* (R.Br.) Benth., *Fl. Austral.* 7: 438 (1878), *nom. illeg. et superfl.* non Boott (1867). **Type:** [Queensland. MORETON DISTRICT:] Brisbane River, *F. Mueller s.n.* (syn: *n.v.*); New South Wales. Clarence River, *Wilcox s.n.* (syn: *n.v.*).

Perennial, with long-creeping rhizome, monoecious, glabrous. Culms tufted, erect, terete to trigonous; 40–100 cm long, 1.5–2.5 mm diameter. Leaves more than half the length of the culm, erect, flat, 2–5 mm wide; sheath pale to mid-brown, with a membranous ligule. Involucral bracts foliaceous, erect, longer than inflorescence, 4–17 cm long. Inflorescence terminal, of 2–6 sessile spikes, 20–50 mm long, proximal spike sometimes distant. Spikes gynaeandrous; ovoid, with 50–100 spikelets; 5–17 mm long, 3–9 mm wide. Spikelets 1-flowered, unisexual, clustered, 3–3.5 mm long, 1.5–2 mm wide, brown to stramineous; rachilla persistent, wingless. Glumes ovate to broadly ovate, 4–5.4 mm long, 2–3 mm wide, glabrous, membranous, keeled, with a straight mucro. Stamens 3; anthers linear, connective smooth. Style deciduous, 2-fid, glabrous. Utricle concave-convex, ovoid, 3–5 mm long, 1.5–1.8 mm wide, pale brown, longitudinally nerved, transversely wrinkled

between nerves; margins hispid; beak 1.5–2.5 mm long, hispid, bifid. Nut biconvex, ovoid to broad ovoid, 1.8–2.1 mm long, 1.4–1.8 mm wide, brown to dark brown, smooth, apex mucronulate, mucro 0.1–0.2 mm long.

Distribution and habitat: Queensland and New South Wales. In the former it has been recorded from the Burnett, Darling Downs, and Moreton pastoral districts. It is found in damp places in forest and woodland.

Key to distinguish *Carex inversa* and *C. lophocarpa* in Queensland

- Culm 5–50 cm long, 0.5–1.5 mm diameter; lamina 0.7–3 mm wide; nuts broadly obovoid or broadly ellipsoid to orbicular, 1.2–1.8 mm long, beak 0.3–1.2 mm long ***C. inversa***
 Culm 40–100 cm long, 1.5–2.5 mm diameter; lamina 2–5 mm wide; nuts ovoid to broadly ovoid, 1.8–2.1 mm long, beak 1.5–2.5 mm long ***C. lophocarpa***

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